of the ampullæ of the semicircular canals. The ready mobility of the stapes in this case, as was demonstrated by a probe at the time of the operation, rendered the patient specially liable to an attack of vertigo from a sudden retraction of the ossicles by the tensor tympani, impaction of the stapes upon the over-distended labyrinth, and consequent undue compression of the ampullæ. Such liability has been overcome by the removal of the incus and the consequent destruction of the retractive power of the tensor tympani and malleus upon the stapes.

A CASE OF ISOLATED URTICARIA OF THE TONGUE, ASSOCIATED WITH ACHLORHYDRIA.

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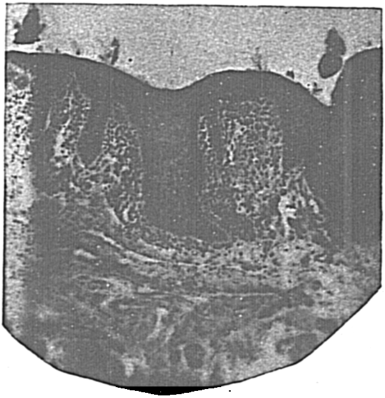
Occasionally in individuals affected by urticaria of the skin the mucous membrane of the mouth becomes the seat of analogous manifestations. Such an involvement receives but brief mention from writers on diseases of the skin, while an isolated occurrence of urticaria upon the oral mucous membrane has apparently not hitherto been observed. The following case seems to be unique so far as is indicated by an examination of the literature:

Local phenomena. The patient, a man, aged thirty-eight years, shoemaker by trade, was first seen October 16, 1897, for soreness of the tongue. He stated that four years previously reddened, sensitive areas made their appearance on the dorsum of the tongue, coming and going irregularly for several months, later increasing in frequency of occurrence as well as in soreness, until two years ago, when he was obliged to give up his work, in which it was necessary to hold shoe tacks in his mouth. Owing also to the sensitiveness of the tongue, he discontinued the use of tobacco, which he had formerly smoked and chewed freely. For the past two years the lingual dorsum has been almost constantly affected by sore, red areas. Recently the mucous membrane of the cheeks and lips has occasionally shown similar manifestations. The skin has at no time exhibited an eruption, so far as he can recall.

When first seen by the writer (J. L. G.) the oral cavity presented the following appearances: The dorsum of the tongue from the circumvallate papillæ to within a centimetre of the tip presents, with the exception of a normal-looking oval area in the centre, about one by one and a half centimetres in diameter, conspicuous alterations of the surface. In this affected region the filiform and fungiform papillæ are moderately and symmetrically enlarged, are brightly reddened, and pass abruptly without other line of demarcation to the normal epithelium in the centre and at the tip of the tongue. The reddened area is traversed irregularly by conspicuous furrows and wrinkles, which can be smoothed out with the fingers, and show no actual abrasion or fissuring of their surface. There is no induration or palpable alteration in consistence anywhere apparent. The normal-looking mucous membrane at the tip of the tongue and over the oval area in the centre previously referred to is smooth and without furrows. The mucous membrane elsewhere in the mouth presents nothing abnormal. The condition of the teeth was good.

The affected portion of the tongue exhibits marked sensitiveness to mechanical, chemical, and thermic irritants. No change in acuteness of taste was apparent. Pruritus or spontaneous pain was not present.

FIG. 1.



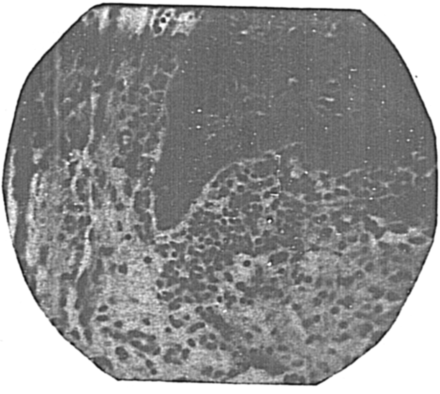
The rete mucosa shows numerous mitoses in its inferior portion. In the corium a pronounced round-celled infiltration is seen, together with several small areas of œdema. Eosin and alkaline methylene-blue. Zeiss apochrom. object. 16 mm., project. ocul. 2.

Pathological anatomy. A portion of the reddened area from the dorsum of the tongue was removed, including some of the adjacent normal-looking mucous membrane. Sections stained with polychrome methylene-blue after hardening in Zenker's fluid showed the following appearances: In the region corresponding to the macroscopically swollen and reddened mucous membrane the horny and squamous layers of the epithelium appear essentially normal, but the rete mucosa exhibits an unusual number of mitoses in its inferior portion. In the intercellular spaces a few polymorphonuclear neutrophiles are found irregularly scattered.

The corium exhibits irregular deficiencies throughout its extent, though most markedly immediately below the mucosa. These deficiencies are formed by a separation of the fibres of the corium, and are due to an œdema and not to disturbance of the tissue from the cutting, since, if sections are stained according to Unna's method by acid orcein, the deficiencies are seen to be traversed irregularly by delicate strands of fibres given off from the neighboring bundles.

In the vicinity of these widened lymph-channels of the corium there is an increased number of both fixed and free cells. The former have a vesicular nucleus, with more or less cytoplasm, and resemble the endothelial cells of the capillaries. The walls of the capillaries exhibit an increase in thickness amounting to two or three cell-layers. The endothelial cells show a distinct swelling of their cytoplasm and apparently of their nucleus. Here and there are found *mastzellen* irregularly distributed through the corium, never more than two or three in a field.

FIG. 2.



Same specimen. Zeiss apochrom. object. 2 mm., project. ocul. 2.

In the neighborhood of this endothelial proliferation there is a distinct cellular infiltration, consisting of polymorphonuclear neutrophiles and smaller cells with deeply staining nucleus and a narrow margin of cytoplasm resembling the small lymphocytes of the blood. These infiltrating cells extend in a scattering fashion to the submucosa. The bloodvessels of the corium contain a considerable number of both these forms of cells. There were no cells found having the character of plasma cells or of eosinophiles.

The process appears, histologically, to consist in a proliferation of the endothelial cells of the corium, accompanied by œdema and leucocytic infiltration in the neighborhood, together with a heightened proliferation of the cells in the rete mucosa.

Frequent examination of the tongue during a period of several months showed a rapid, continual shifting in position of the reddened areas. These were generally rounded or oval in outline and exhibited no tendency to the formation of serpiginous or gyrate figures. The eruption appeared to arise evenly and simultaneously over a given area, subsiding in a like manner. Occasionally a transitory reddening of the mucous membrane of the cheeks and lips was noted, lasting a day or two and attended by local sensitiveness to irritants. At no time was an excessive epithelial exfoliation noted, such as is seen in superficial wandering glossitis (geographical tongue; Moeller's superficial glossitis).[1]

Local applications and mouth-washes of various kinds, soothing, antiseptic, and stimulating, were employed at different times, but no effect upon the local manifestations was apparent.

The local clinical phenomena, in connection with the histological examination, led to the belief that a condition of the lingual mucous membrane existed analogous to and essentially identical with that characterizing urticaria of the skin.[2]

General phenomena (reported by H. F. H.). The patient was subject to more or less constant symptoms of digestive disturbance, and it seemed wise to investigate this aspect of the case, both with the idea of relieving these symptoms and the condition which might underlie them and also in the hope that such an investigation might throw some light upon the cause of the local condition in the tongue.

The history of the digestive disturbance covered a period of eight years. For the last four years the character of the trouble has been constant, of the same type as at present. Before that time the patient suffered from occasional attacks of an acute nature, consisting of nausea, morning vomiting, much distress, and vomiting after ingestion of food. These attacks generally followed a spree of alcoholic indulgence. They lasted in some cases a few days, in some two or three weeks, and became progressively more frequent and of longer duration until the patient gave up hard drinking, four years ago.

The symptoms during the last four years and at the time of investigation have been as follows:

Upon rising in the morning there is a sense of nausea and unrest in the stomach, a bad taste in the mouth, much eructation of tasteless, unirritating gas.

Immediately upon ingestion of food, perhaps within five minutes, there is a feeling of fulness and distress in the stomach, which frequently increases to a dull pain. The patient has to lie down for one-half hour until the distress lessens. During this period of distress, lasting one-half to one and one-half hours, there is constant regurgitation of food and much eructation of gas. The regurgitations begin at times before the meal is finished. The food is brought up in mouthfuls. As a rule, it is swallowed again, but occasionally is ejected. The regurgitated food is unirritating and of a somewhat sour taste throughout the whole period of regurgitation. In time past the later regurgitations, at an interval of an hour or more after the ingestion of food, have been acid and burning, but for the last year no acid taste has been noted at any time. There is no vomiting unless induced by the patient to relieve the distress, and then never of large amounts.

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[1] See this JOURNAL, November, 1896.

[2] My thanks are due Dr. James H. Wright, director of the laboratory of the Massachusetts General Hospital, for valued assistance in the histological examinations, and to Mr Brown, of the laboratory, for the preparation of the micro-photographs.

The symptoms occur after each meal of ordinary amount. They do not occur, or are slight, after a meal consisting of a small quantity of milk or bread and milk, or a small piece of beefsteak, but do occur with a large quantity of milk alone, or with any mixture of food sufficient to satisfy the patient's appetite. These latter facts were learned by experimentation while the patient was under my charge. The appetite is somewhat excessive.

Three hours after a meal the sense of discomfort is gone and returns only upon ingestion of food. At periods of from one to two hours after a meal the patient has spells of extreme drowsiness associated with languor and muscular relaxation. The condition is one of torpor, not sleep. All capacity of mental attention lapses. the body is completely relaxed, and saliva runs from the mouth. The spell endures one-half to one hour. It is often followed by a dull headache and general sense of malaise and inertia.

The bowels are regular. There is much intestinal gas, frequently discharged, of foul odor. The general health is poor. The strength is less good than formerly, and there is much inertia. The weight has been constant for the last two years, but is much below his former weight. These, together with the disturbance arising from the condition of the mouth described by Dr. Goodale, are all the symptoms of which the patient complains at the present time.

The family history is good.

The patient was healthy as a boy, but thinks that he ruined his constitution by excessive indulgence in tobacco and alcohol during a period of years culminating about four years ago. He admits much sexual indulgence; has had gonorrhœa, but never syphilis.

Examination. The patient is thin, not emaciated; skin sallow; pupils normal; color vision normal. The reflexes normal. Examination of thorax negative. Evidence of abnormal condition was found in the mouth as described, in the blood, in the urine, and in the digestive tract.

The urine was pale. Specific gravity 1017. Albumin present in slightest possible trace. Indoxyl increased.

Sediment contained a few small, hyaline casts, with occasional cell and abnormal blood-corpuscles adherent.

The blood showed evidence of slight anæmia. The hæmoglobin was reduced. There was evidence of some degeneration in the corpuscular elements. No evidence of pernicious anæmia.

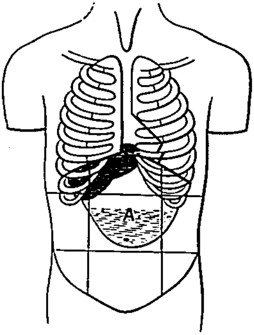
The condition of the mouth has been described.

The stomach-tube was passed in the fasting stomach twelve hours after the ingestion of food. Forty c.c. of residue were withdrawn. The contents were of green color and contained bile. The reaction was alkaline. The sediment contained mucus, few epithelial cells, yeast fungi, very few remains of food. There was practically no evidence of stasis or of hypersecretion.

The empty stomach extended by percussion to one finger above the umbilicus. No tumor palpated.

With inflation the lower border of the stomach extended slightly below the umbilicus. With distention with one litre of water the lower border sank to two fingers below the umbilicus. Electrical illumination of the stomach demonstrated the lower border at from two to three fingers below the umbilicus. The lowest point was about one inch to the left of the median line. (Fig. 3.) The upper border was apparently in the normal position. The viscus moved up and down with forced respiration. The capacity of the stomach was 1800 c.c. The spleen was in normal position. The edge of the liver could be felt just at the costal border in the right hypogastrium. The transverse colon was prominent, in normal position, and filled with gas.

FIG. 3.



The gastric contents expressed one hour after an Ewald test-meal, consisting of one roll and one glass of water, showed the following characteristics: The food appeared much as when it leaves the mouth for the stomach.

Quantity 80 c.c.; odor normal; reaction acid to litmus; no free acids present to Congo-red test; no free HCl present; no lactic, butyric, or acetic acid.

Ewald's modification of Sjoqvist test for combined HCl gave a negative result. Total acidity 0.36 gramme per mille. Rennin present, about one-quarter normal. 0.2 per cent. HCl forced into the stomach and withdrawn showed the presence of small amounts of pepsin. The filtrate of the contents did not digest coagulated egg-albumin in twenty-four hours. Starch digestion advanced. Contents obtained in a similar manner at periods of from three-quarters to two hours after a test breakfast upon ten occasions showed similar characteristics. Free HCl and combined HCl were never present. Lactic acid was never present to the clinical tests. The total acidity varied upon different occasions between 0.2 gramme per mille and 0.4 gramme. The contents were present in the stomach two hours after the meal, and upon two occasions two and a quarter hours after. The stomach was empty two and one-half hours after the meal. The amount of contents varied between 80 and 140 c.c. The contents of the fasting stomach varied in amount from 20 to 40 c.c. upon four occasions.

The acidity of the contents was due presumably to the test-meal, which in infusion had a total acidity of 0.4 gramme per mille.

The evidence of the clinical examination of the stomach showed, therefore, entire absence of the secretion of hydrochloric acid; some but diminished secretion of pepsin and of rennin; no digestion of proteid food; diminished motility. The size and position of the stomach were normal.

The condition of achlorhydria such as we have in this case occurs in conditions of atrophy of the glandular structure of the gastric mucous membrane. In cases of complete atrophy the process is said to include the cells in which the pepsinogen and rennet zymogen are elaborated, so that no traces of pepsin or of rennin can be obtained in the contents or in the acid wash-water.

It is not uncommon, however, to find traces of these ferments present in certain stages of atrophy of the stomach when the acid secreting cells have become absolutely unproductive. Certain authorities, as Van Noorden, Martius, claim that a total absence of ferment zymogen occurs in no diseased condition. This case may then be one of atrophy of the gastric mucous membrane where the atrophy has not as yet become entire. The pathological process present may be one of chronic gastritis with progressive atrophy of the glandular structure.

Achlorhydria may, however, occur as the result of a permanent disturbance of the nutrition or innervation of the gland-cells unassociated with the pathological changes in the cells which occur in atrophy. It is stated that a majority of the cases of achylia gastrica are of this nature.

It is impossible in this case in hand to determine definitely whether the pathological condition underlying the achlorhydria is one of atrophy or of disturbance of innervation of the cells.

The record of prolonged alcoholic abuse and the history of the progress of the case argue for the former condition, the so-called gastritis atrophicans.

The treatment indicated and advised was a diet consisting of food of a nature which would not irritate or burden the stomach, administered in moderate quantities in five meals daily, with reliance upon the intestinal function for digestion.

The patient was given a powder consisting of capsicum and sodium bicarbonate for the relief of the distress after meals and particularly the sense of craving for whiskey, which the patient was accustomed to satisfy at that time. Strychnine, grain $\frac{1}{25}$ t. i. d., was given to improve the motility, and belladonna to control the excessive salivation. It was obviously impossible to restore gastric digestion in this case, as the patient would have needed two quarts of dilute HCl at a meal to accomplish this.

Under this treatment the condition improved. At the end of one month of steady treatment the spells of distress after meals had practically disappeared, and the patient never had to lie down as formerly. The regurgitation had become very infrequent. The capsicum had quite taken the place of the whiskey.

All medicines except the strychnine had been discontinued.

The drowsiness was less, but was still present. The urticaria persisted unchanged.

After the commonly stated hypothesis that urticaria may be secondary to a condition of intestinal sepsis, it seemed possible that the urticaria in this case might be the result of a condition of intestinal sepsis consequent upon the absence of the natural antiseptic of the food in the upper intestinal tract, the free HCl, from the stomach. There were no direct symptoms of intestinal sepsis except, perhaps, the drowsiness and intestinal flatulency. It was determined, however, to treat the patient for a possible intestinal sepsis as a causal factor of the urticaria.

As stated, it was impossible to utilize the natural antiseptic, free HCl, in this case, so an artificial antiseptic (salol) was used. Five grains of salol were given from two to three hours after three of the meals. The diet was continued as before.

In the course of the next week some improvement was noted in the tongue by the patient; the soreness was still constant, but less marked, and the reddened areas appeared of less extent.

In the course of the second week the urticaria disappeared entirely from the surface of the tongue.

During the third and fourth weeks no soreness or redness upon the surface of the tongue was noted by the patient, and none was found upon examination. Under salol there had been practical immunity during a period of three weeks. Previous to this time the soreness had disappeared upon occasions for a day at a time, but never for a longer period during the several years of the disturbance. At the end of the fourth week the salol was discontinued.

In the course of the next week the urticaria reappeared upon the surface of the tongue and became again constant during the next week.

Benzo-naphtol was then administered in place of salol in doses of four grains six times a day. The condition of the tongue again improved with this treatment, but a continuous immunity, such as occurred under salol, did not obtain during the two weeks in which the benzo-naphtol was given. Upon resumption of the salol the relief of the condition again became entire and constant, and has so continued during the last month. The improvement of the condition under the benzo-naphtol as well as with the salol would tend to show that the result was due to an antiseptic action, which property these two drugs possess in common, and not to a specific action of the salol. The action was more efficient in the case of the salol. The case is to be further investigated in regard to the action of other drugs of this class of antiseptics. With the improvement in the urticaria the spells of drowsiness have to a great extent disappeared. The intestinal flatulency has also become much lessened.

The urine has shown no evidence of a deleterious effect of the salol upon the renal functions.

The condition of the stomach has remained good as far as symptoms are concerned. The symptoms of distress after meals and of regurgitation occur at present very infrequently.

The stomach is not infrequently empty two hours after an Ewald meal, while during the first two months of treatment the emptying never occurred before two and one-half hours This suggests an improvement in the motility of the organ. The condition of the secretions is unchanged.

The patient is much stronger and works regularly.

At the time of writing there is no evidence of urticaria upon the tongue and there has been none during the last month.

[NOTE.—September 1, 1898. The patient having changed his residence, no further experimentation has been possible. Three months after this article was sent to press patient wrote that no return of urticaria had occurred. During these months had taken salol gr. iij three times daily for four successive days of the week, omitting it on the other three days.]

ENTERO-PLASTIC OPERATION TO OVERCOME OR PREVENT STENOSIS, WITH ESPECIAL REFERENCE TO THE SPUR IN PRETERNATURAL ANUS.

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THE principle of overcoming a stenosis of a canal by transverse union of a longitudinal incision, as applied by Heinecke-Mikulicz on the pylorus and by me on the ureter, is applicable in any portion of the intestinal tract below the duodenum wherever the mechanical conditions will permit.

The longitudinal incision or opening should be made in the middle of the convex surface—that is, equidistant from the two sides of the mesentery, so as not to interrupt blood-supply by the division of large vessels in the intestinal wall. Free mobility of the loops of intestine and intact peritoneal covering are desirable conditions, but the latter is not absolutely necessary. In places where the intestine has no mesentery and where there is a limit to the infolding or bringing into apposition of the convex surface or the surface of the intestine opposite the mesentery, as the cæcum, extraperitoneal border of the rectum or flexures of the colon, there is a limit to the length of the longitudinal incision. In an organ so free and movable as the small intestine, I see no reason why I could not unite the convex surface to an extent of five or six inches, or more, if this would be desirable. In fact, I see no other limit than that of the length of the mesentery, the time required for suturing, and the length of the wound. It is evident that the length of the longitudinal wound should not be unnecessarily great.

When there is no mesentery, and consequently only slight mobility, for folding in or apposition of the convex free surface of the intestine, or where the mobility is diminished or lost by diffuse inseparable adhesions, there is, of course, a limitation to the application of this principle.

In one case of stenosis of the cæcum from tuberculosis, with remittent attacks of pain from incomplete occlusion, in which I did not deem